17. (new) A method as claimed in claim 16, wherein the step of electro-fusing the fiber lens by exposing the fiber lens to the electrical arc comprises exposing the fiber lens to electrical arc pulses.

Remarks:

Claims 1-17 are pending in this application. New claims 16 and 17 have been added to alternatively define Applicants' invention.

The previously pending claims were rejected in two closely related rejections. Specifically, claims 1-5 and 7-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,563,969 to Honmou, or in the alternative, as being obvious over Honmou, under 35 U.S.C. § 103(a). Also, claims 6, 12, 14, and 15 were rejected as being unpatentable over Honmou, in further view of U.S. Pat. No. 4,758,386 to Fanning.

Applicants respectfully believe that the present pending claims are neither anticipated nor obvious over the applied references.

Claim 1, for example, requires the detection of a diffraction pattern exiting from a fiber lens. The fiber lens is then electro-fused in response to a two-dimensional distribution of the diffraction pattern.

Applicants respectfully contend that these claims are non-obvious because even if it were assumed that the Honmou Patent teaches the detection of the two-dimensional pattern, Honmou does not suggest that the lens should be fused in response to the pattern's two-dimensional distribution.

As pointed out by the Applicants and noted by the Examiner in the pending Office Action, the Honmou Patent teaches that the fusing should be performed in response to the diameter. It is agreed that the diameter is a one-dimensional parameter. Thus the feature of fusing in response to the two-dimensional distribution is not taught.

The Examiner's arguments concerning this point surround the assertion that the diameter, as mentioned in the Honmou Patent, means something other than "diameter".

For example, it is argued, at page 3 of the pending Office Action, that the "diameter directly represents the size and shape of a two-dimensional circular pattern". This contention is in conflict with the accepted meaning of this term.

It is further argued that "there is a direct correlation between the diameter and the size and shape of the two-dimensional distribution". This may be true, but the point remains the same. That is, Honmou Patent does not show or suggest the fusing of a fiber lens in response to the size and shape of the two-dimensional distribution. Instead, it fuses in response to the diameter, which is a one dimensional parameter.

To hopefully further distinguish the invention, new claim 16 has been added. This is an independent claim that requires "electro-fusing the fiber lens in response to the aspect ratio of the diffraction pattern by exposing the fiber lens to an electrical arc until an optimal aspect ratio is detected". Here again, the Applicants are claiming something specific. That is, fusing in response to the aspect ratio of the diffraction pattern. Honmou Patent fails to mention either the calculation of, or the fusing in response to, this metric. It cannot be obvious to do something that is neither shown nor suggested.

The Office Action further argues that "determining a ratio of sizes is contrasted with a single size value would have been merely the discovery of optimum or workable parameters of shape, well within the scope of routine experimentation, given the teachings of Honmou". The amount of experimentation, however, is not the touchstone for patentability. Instead, the touchstone for patentability is whether or not the claimed invention is shown in the prior art or obvious based upon the prior art. There has been no evidence presented to establish the obviousness.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejection.

Attached hereto is a marked-up version of the changes made to the specification and claims by the instant amendments. The attached appendix is captioned "Version with Markings to Show Changes Made." Please note that due to the amendments, the page and line numbers may be different from the specification as originally filed. Please

further note that any the page and line numbers hereinabove are relative to the original specification.

Applicants believe that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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Version with Markings to Show Changes Made

CLAIMS

What is claimed is:

1. (amended) A method for fusing an optical fiber lens, comprising:
injecting light into an optical fiber;
detecting a diffraction pattern of the light exiting from a fiber lens at a proximal end of the optical fiber; and
electro-fusing the fiber lens in response to a two-dimensional distribution of the diffraction pattern.

2. (amended) A method as claimed in claim 1, wherein the step of injecting the light into the optical fiber comprises energizing a laser that is coupled to a distal end of the optical fiber.

3. A method as claimed in claim 1, wherein the step of detecting the diffraction pattern comprises detecting a far-field diffraction pattern.

4. A method as claimed in claim 1, wherein the step of detecting the diffraction pattern comprises positioning a two-dimensional detector optically in front of the fiber lens.

5. A method as claimed in claim 1, further comprising analyzing a two-dimensional distribution of the diffraction pattern.

6. A method as claimed in claim 5, wherein the step of analyzing the diffraction pattern comprised determining a ratio of a lateral size to a transverse size of the diffraction pattern.

7. A method as claimed in claim 1, wherein the step of fusing the fiber lens comprises exposing the fiber lens to an electrical arc.

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8. (amended) A system for fusing an optical fiber lens, comprising:

a light source that injects light into an optical fiber;

a detector that detects a two-dimensional distribution of a diffraction pattern of the light exiting from a fiber lens at a proximal end of the optical fiber;

an arc fuser that fuses the fiber lens; and

a controller that activates the arc fuser in response to the two-dimensional distribution of the diffraction pattern detected by the detector.

9. A system as claimed in claim 8, wherein the light source comprises a laser that is coupled to a distal end of the optical fiber.

10. (amended) A system as claimed in claim 8, wherein the detector is positioned relative to the fiber lens to detect a far-field diffraction pattern.

11. A system as claimed in claim 8, wherein the detector is positioned greater than 0.5 centimeters from the fiber lens.

12. A system as claimed in claim 8, wherein detector comprises a camera.

13. (cancelled)

14. A system as claimed in claim 8, wherein the controller determines a ratio of a lateral size to a transverse size of the diffraction pattern.

15. A system as claimed in claim 8, wherein the controller activates the arc fuser in a pulsed fashion until a desired diffraction pattern is detected by the detector.

16. (new) A method for fusing an optical fiber lens, comprising:

injecting light into an optical fiber;

Version with Markings to Show Changes Made

detecting an aspect ratio of a diffraction pattern of the light exiting from a fiber lens at a proximal end of the optical fiber by positioning a two-dimensional detector optically in front of the fiber lens; and

electro-fusing the fiber lens in response to the aspect ratio of the diffraction pattern by exposing the fiber lens to an electrical arc until an optimal aspect ratio is detected.

17. (new) A method as claimed in claim 16, wherein the step of electro-fusing the fiber lens by exposing the fiber lens to the electrical arc comprises exposing the fiber lens to electrical arc pulses.